

What is claimed is:

1. A teaching device for teaching a robot of positions for performing an operation on an object, comprising:

storage means storing positional relation between of the robot and the object;

first displaying means for displaying a model of the robot on a display device movable around the object with an operator;

specifying means for the operator to specify a direction of a present position of the operator with respect to the robot, referring to the model of the robot displayed on the display device;

second displaying means for displaying a three-dimensional model of the object as viewed from the specified direction of the operator on the display device; and

manual operation means for the operator to operate the robot for designating positions for performing the operation on the object, referring to the three-dimensional model of the object displayed on the display device.

2. A teaching modification device for modifying positions of taught points or orientations at the taught points for performing an operation on an object by a robot, comprising:

storage means storing positional relation among the robot, the object and the taught points;

first displaying means for displaying a model of the robot on a display device movable around the object with an operator;

specifying means for the operator to specify a direction of a present position of the operator with respect to the robot, referring to the model of the robot displayed on the display device;

second displaying means for displaying a three-dimensional model of the

object and the taught points as viewed from the specified direction of the operator on the display device; and

manual operation means for the operator to operate the robot for modifying positions of the taught points or orientations at the taught points, referring to the three-dimensional model of the object and the taught points displayed on the display device.

3. A teaching device for teaching a robot of positions for performing an operation on an object, comprising:

storage means storing positional relation between of the robot and the object;

first displaying means for displaying a model of the object on a display device movable around the object with an operator;

specifying means for the operator to specify a direction of a present position of the operator with respect to the object, referring to the model of the object displayed on the display device;

second displaying means for displaying an image of a three-dimensional model of the object as viewed from the specified direction of the operator on the display device; and

manual operation means for the operator to operate the robot for designating positions for performing the operation on the object, referring to the three-dimensional model of the object displayed on the display device.

4. A teaching modification device for modifying positions of taught points or orientations at the taught points for performing an operation on an object by a robot, comprising:

storage means storing positional relation among the robot, the object and the taught points;

first displaying means for displaying a model of the object on a display

device movable around the object with an operator;
specifying means for the operator to specify a direction of a present position of the operator with respect to the object, referring to the model of the robot displayed on the display device;
second displaying means for displaying a three-dimensional model of the object and the taught points as viewed from the specified direction of the operator on the display device; and
manual operation means for the operator to operate the robot for modifying positions of the taught points or orientations at the taught points, referring to the three-dimensional model of the object and the taught points displayed on the display device.

5. A teaching modification device for modifying positions of taught points or orientations at the taught points for performing an operation on an object by a robot, comprising:

storage means storing positional relation among the robot, the object and the taught points;
displaying means for displaying a three-dimensional model of the object and the positions of the taught points on a display device movable around the object with the operator;

selecting means for the operator to select one of the taught points displayed on the display device;

determining means for determining whether or not the selected taught point is visible without interference on the display device in a direction of a present line of sight on the three-dimensional model; and

altering means for altering the line of sight on the three-dimensional model on the display device such that the selected taught point is visible without interference in the direction of the altered line of sight when it is determined that the selected taught point is not visible on the display device by

said determining means.

6. A robot teaching device according to claim 1 or 3, wherein at least a part of a model of a tool attached to the robot is displayed on the display device with the three-dimensional model of the object, when the robot is operated such that the tool is located in the vicinity of the object.

7. A robot teaching device according to claim 2, 4 or 5, wherein at least a part of a model of a tool attached to the robot is displayed on the display device with the three-dimensional model of the object, when the robot is operated such that the tool is located in the vicinity of the object.